

Experiment 06

Aim: Implementation of Hebbian Learning

Code & Output:

```
import numpy as np

def hebb_learn (y):
    w = np.array ([0, 0, 0])
    b = 0
    x = np.array ([-1, -1, 1], [-1, 1, 1], [1, -1, 1], [1, 1, 1])
    for i in range (4):
        w = w + (x [i]*y [i])
    for i in range (4):
        sum = 0
        for j in range (3):
            sum += x [i][j]*w[j]
        y [i] = sum
    return (y)

print (hebb_learn (np.array ([-1, -1, -1, 1]))) #AND Gate
y = hebb_learn (np.array ([-1, 1, 1, 1])) #OR Gate
```

```
Shell

AND GATE
[-6 -2 -2  2]
OR GATE
[-2  2  2  6]
>
```

Figure 1: Output